```
MNDPNSCVDNATVCSGASC - - - VVPESNFNNILSVVLSTV ISBT
   MRA - - NC - SSSSACPANSSEEELPVGLEVHGNLELVFTVV TCH230
38 LTILLALVMFSMGCNVEIKKFLGHIKRPWGICVGFLCQFG ISBT
38 STVMMGLLMFSLGCSVEIRKLWSHIRRPWGIAVGLLCQFG TCH230
78 IMPLTGFILSVAFDILPLQAVVVLIIGCCPGGTASNILAY ISBT
78 LMPFTAYLLAISFSLKPVQAIAVLIMGCCPGGTISNIFTF TCH230
118 W V D G D M D L S V S M T T C S T L L A L G M M P L C L L I Y T K M W V D S G S ISBT
118 W V D G D M D L S I S M T T C S T V A A L G M M P L C I Y L Y T W S W S L Q Q N TCH230
158 I V I P Y D N I G T S L V A L V V P V S I G M P V N H K W P Q K A K I I L K I G ISBT
158 L T I P Y Q N I G I T L V C L T I P V A F G V Y V N Y R W P K Q S K I I L K I G TCH230
198 SIAGAILIVLIAVVGGILYQSAWIIAPKLWIIGTIFPVAG ISBT
198 AVVGGVLLLVVAVAGVVLAKGSWNSDITLLTISFIFPLIG TCH230
238 Y S L G F L L A R I A G L P W Y R C R T V A F E T G M Q N T Q L C S T I V Q L S ISBT
238 HVTGFLLALFTHQSWQRCRTISLETGAQNIQMCITMLQLS TCH230
278 PTPEELNVVFTFPLIYS IFQLAFAAIFL GFYVAYKKC - - - ISBT
278 FTAEELVQMLSFPLAYGLFQLIDGPLIVAAYQTYKRRLKN TCH230
315 - HGKNKA - - - EIPESKENGTEPESSFY - - - KANGGPQPDE ISBT
318 KHGKKNSGCTEVCHTRKSTSSRETNAFLEVNEEGAITPGP TCH230
                                                                       ISBT
358 P G P M D C H R A L E P V G B I T S C E
                                                                       TCH230
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FIG. 2

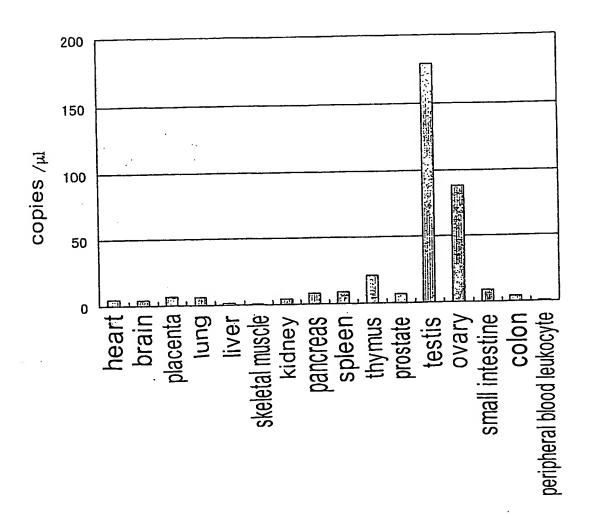
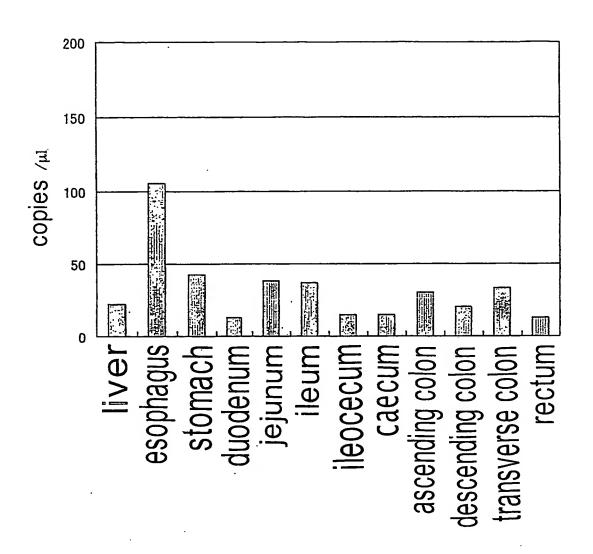


FIG. 3





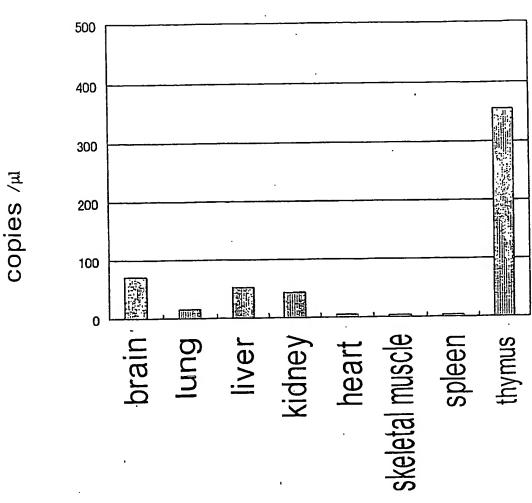
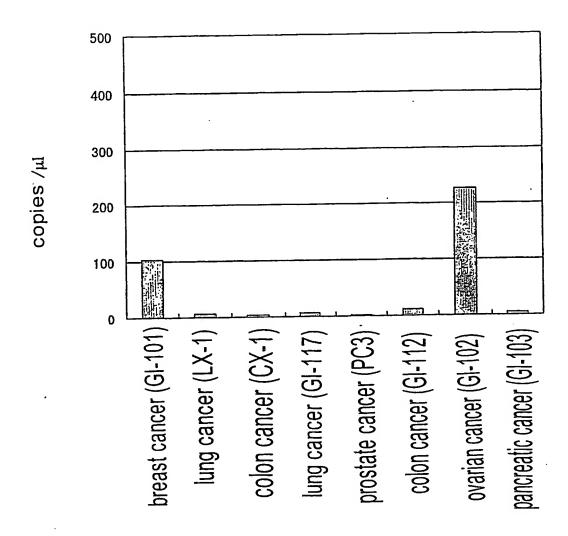


FIG. 5



	TM1	
TCH234	RALONFUTY SPRINCH LLIVADED SEAS SPLINES ANS PAR Y AS NOW FARASSET	54
ratNHE4		54
humanNHE2		65
	TM2 TM3	
TCH234		124
ratNHE4	ERISVFELDYDYVQIPYEVTLWILLASLAKIGFHLYHRLFHLMPESCLLIIVGALVGBIIFGTHHKSPPV	124
	SHIPVETLDYPHVOIHFEITLWILLASLAKIGFHLYHKLETIVPESCLLIMVGLHLEGIIFGVBEKSPHA	135
humanNHE2		
	2 1727	194
TCH234		194
ratNHE4		205
humanNHE2	WKLDAN FILTERALA INDERLEASE SELECTION OF SEL	
	TM6 ONLLPGSLISAVDPVAVLAVFEEARVNEQLYMMIFGEALLNDGITVVLYNMLIAFTKMHKFEDIETVDII	264
TCH234	ONLLYGSLISAVDPVAVLAVFEERKVNEQLIMMIFGERLENDGITVVLINGERING TARMINE BETTTENDE	264
ratNHE4	DWPPE G2F12WAPE AWAPE AND	
humanNHE2	QNLLFGSLISAVDPVAVLAVFENIHVNEQLYILVFGESLLNDAVEVVLYNLFKSGCOHKTLETIHVF	212
	TM8 TM9	334
TCH234	MCCVKITA AGTOCATE GIAL OLIVE TIM I SUTDETTE DIALING CONTROL OF CON	334
ratNHE4	MCCWKIATAGORG ALL GUTL GLIDWI TIME I SULDWING DIALING DE LINE	
humanNHE2	PGIPMELANGIECAJICILICELIVELLERIHWIKATESTEARILISE	342
	TM10 TM11	404
TCH234	MKKYVEENVSQTSYTTIKYFMKMLSSVSETLIFIPMGVSTVGKNHEWNWARICPTLAFCQIWRAISVEAD	404
ratNHE4	MKKYVEENVSQTSYTTIKYFMKMLSSVSETLIFIFMGVSTVGKNHEWNWAFVCFTLAFCQIWRAISVETL	404
humanNHE2	MAKYVEENVSQKSYTTIKYFMKHLSSVSETLIFIFMGVSTVGKNEEWNWAFVCFTLAFQLMWRALGVEVH	412
TCH234	TM12 TM13 FYIENOFRTFPFSIKDQCIIFYSGVRGAGSFSLAFLLPISLFPRKKMFVTATLVVIYFTVPIQGITVGPI	474
TCH234 ratNHE4	FYVSNOFRTFPFSIKDQLIIFYSGVRGAGSFSLAFLLPUTLFPRKKLFVTATLVVTVFFTVEFDGITIGPI	474
	TM12 FYISNOFRTFPFSIRDOCHIFYSGVRGAGSFSLAFLLPUSLFPRKKMFVTATLVVIYFTVFIQGITVGPU FYVSNOFRTFPPSIRDOLHIFYSGVRGAGSFSLAFLLPUTLFPRKKLFVTATLVVTYFTVFFQGITIGPU TOVINRFRTIHLTFKDGFLTANGGLRGATCHANVPLLHAAVFPRKKLFITAAIVVJFPTVFILGITIRPU	
ratNHE4	FYVSNOFRTFPPSIKOCHLIFYSGVRGAGSFSLAFLLPHTLFPRKKLFVTATLVYTYFTVEFDGITIGFI TOVINRFRTIELTFKOCHLIANGGLRGAICEANVPLLHAAVFPRKKLFILAAIVVIFFTVFILGITIRPI	474 482
ratNHE4	FYVSNOFRTFPPSIKOdilIFYSGVRGAGSFSLAFLLPHILFPRKKLFVTATLVVIYFTVEFDGITIGFI TOVINFRENIELTFKDGFLIANGGLRGAICEANVFLLHAAVFPRKKLHILAAIVVIFFTVFILGITIRFI VRYLDVKKTNKKE-SINEELHIRLMDHLKAGIEDVCGHWSHYQVRDKFKKFDHRYLRKILIHKNLPKSSI	474 482 543
ratNHE4 humanNHE2	FYVSNOFRTFPPSIKOCHIFYSGVRGAGSFSLAFLLPHTFPRKKLFVTATLVYTYFTVEFDGITIGPI TOVINFRETIELTFKOCHIFANGGLRGAICEAUVPLLHAAVFPRKKLEITAAIVVIFFTVFILGITIRPI VRYLDVKKTNKKE-SINEELHIRLMDHLKAGIEDVCGHWSHYQVRDKFKKFDHRYLRKILIEKNLPKSSI VRYLDVFKTNKKE-SINEELHIRLMDHLKAGIEDVCGGWSHYQVRDKFKKFDHRYLRKILIEKNQPKSSI	474 482 543 543
ratNHE4 humanNHE2 TCH234	FYVSNOFRTFPPSIKOdilIFYSGVRGAGSFSLAFLLPHILFPRKKLFVTATLVVIYFTVEFDGITIGFI TOVINFRENIELTFKDGFLIANGGLRGAICEANVFLLHAAVFPRKKLHILAAIVVIFFTVFILGITIRFI VRYLDVKKTNKKE-SINEELHIRLMDHLKAGIEDVCGHWSHYQVRDKFKKFDHRYLRKILIHKNLPKSSI	474 482 543
ratNHE4 humanNHE2 TCH234 ratNHE4	FYVSNOFRTFPPSIKODILIFYSGVRGAGSFSLAFLLPHILFPRKKLFVTATLVVIYFTVEFDGITIGFI TOVINFRENIELTFKOOPLIANGGLRGAICEANVFLLHAAVFPRKKLEILAAIVVIFFTVFILGITIRPI VRYLDVKKTNKKE-SINEELHIRLMDHLKAGIEDVCGHWSHYQVRDKFKKFDHRYLRKILIFKNLPKSSI VRYLDVFRTNKKE-SINEELHIRLMDHLKAGIEDVCGHWSHYQVRDKFKKFDHRYLRKILIFKNQPKSSI VEFLDVFRSNKKQQAVSEEIYCRLFPHVKTGIEDVCGHWGHNFWRDKFKKFDRYLRKILIFENQPKSSI	474 482 543 543 552
ratNHE4 humanNHE2 TCH234 ratNHE4	FYVSNOFRTFPPSIKODILIFYSGVRGAGSFSLAFLLPHILFPRKKLFVTATLVVITYFTVEFDGITIGFI TOVINFRENIELTFKODFLIANGGLRGAICHALVPLLHAAVFPRKKLEILAAIVVIFFTVFILGITIRPI VRYLDVKKTNKKE-SINEELHIRLMDHLKAGIEDVCGHWSHYQVRDKFKKFDHRYLRKILIFKNLPKSSI VRYLDVFKTNKKE-SINEELHIRLMDHLKAGIEDVCGHWSHYQVRDKFKKFDHRYLRKILIFKNQPKSSI VEFLDVFRSNKKQQAVSEETYCRLFPHVKTGIEDVCGHWGHNFWRDKFKKFDRYLRKILIFENQPKSSI VSLYKKLEMKQAIEMVETGILSSTÄFSIFHDAQRIQGIKRLSPEDVESIRDILISNMYQVRQRTLSYNKY	474 482 543 543 552
ratNHE4 humanNHE2 TCH234 ratNHE4 humanNHE2	FYVSNOFRTFPPSIKODILIFYSGVRGAGSFSLAFLLPHILFPRKKLFVTATLVVTYFTVEFDGITIGFI TOVINFRENIELTFKODILIANGURGAL CEALVPLLHAAVFPRKKLEILAAIVVIFPTVFILGITIRPI VRYLDVKKTNKKE-SINEELHIRLMDHLKAGIEDVCGHWSHYQVRDKFKKFDHRYLRKILIFKNLPKSSI VRYLDVFKTNKKE-SINEELHIRLMDHLKAGIEDVCGHWSHYQVRDKFKKFDHRYLRKILIFKNQPKSSI VEFLDVFRSNKKQQAVSEEIYCRIFDHVKTGIEDVCGHWGHNFWRDKFKKFDDKYLRKILIFENQPKSSI VSLYKKLEMKQAIEMVETGILSGTAFSIFHDAORIQGIKRLSPEDVESIRDILISNMYQVRQRTLSYNKY VSLYKKLEMKQAIEMVETGILSGTAFSIFHDAORIQGIKRLSPEDVESHRDILTRNMYQVRQRTLSYNKY	474 482 543 543 552 613 613
ratNHE4 humanNHE2 TCH234 ratNHE4 humanNHE2 TCH234	FYVSNOFRTFPPSIKODILIFYSGVRGAGSFSLAFLLPHILFPRKKLFVTATLVVIYFTVEFDGITIGFI TOVINFRENIELTFKOOPLIANGGLRGAICEANVFLLHAAVFPRKKLEILAAIVVIFFTVFILGITIRPI VRYLDVKKTNKKE-SINEELHIRLMDHLKAGIEDVCGHWSHYQVRDKFKKFDHRYLRKILIFKNLPKSSI VRYLDVFRTNKKE-SINEELHIRLMDHLKAGIEDVCGHWSHYQVRDKFKKFDHRYLRKILIFKNQPKSSI VEFLDVFRSNKKQQAVSEEIYCRLFPHVKTGIEDVCGHWGHNFWRDKFKKFDRYLRKILIFENQPKSSI	474 482 543 543 552 613 613
ratNHE4 humanNHE2 TCH234 ratNHE4 humanNHE2 TCH234 ratNHE4	FYVSNOFRTFPPSIKODILIFYSGVRGAGSFSLAFLLPHILFPRKKLFVTATLVVTYFTVEFDGITIGFI TOVINFRENIELTFKODILIANGURGAL CEALVPLLHAAVFPRKKLEILAAIVVIFFTVFILGITIRPI VRYLDVKKTNKKE-SINEELHIRLMDHLKAGIEDVCGHWSHYQVRDKFKKFDHRYLRKILIFKNLPKSSI VRYLDVKKTNKKE-SINEELHIRLMDHLKAGIEDVCGHWSHYQVRDKFKKFDHRYLRKILIFKNQPKSSI VEFLDVKRSNKKQQAVSEEIYCRIFDHVKTGIEDVCGHWGHNFWRDKFKKFDHRYLRKILIFKNQPKSSI VSLYKKLEMKQAIEMVETGILSSTAFSIFHDAGRIQGIKRLSPEDVESIRDILISNMYQVRQRTLSYNKY VSLYKKLEMKQAIEMVETGILSSVASPTHYDSERIQGIKRLSPEDVESMRDILTRNMYQVRQRTLSYNKY VSLYKKLEMKQAIEMAETGILSSVASPTHYDSERIQGIKRLSPEDVESMRDILTRNMYQVRQRTLSYNKY VSLYKKLETHHAIEMAETGILSSVASPTHYDSERIQGIKRLSPEDVESMRDILTRNMYQVRQRTLSYNKY	474 482 543 543 552 613 613
ratNHE4 humanNHE2 TCH234 ratNHE4 humanNHE2 TCH234 ratNHE4	FYVSNOFRTFPPSIKODILIFYSGVRGAGSFSLAFLLPHILFPRKKLFVTATLVUTFFTVEFDGITIGFI TOVINFRETIELTFKODILIANGERGAICHALVELHAAVFPRKKLEILAAIVVIFFTVFILGITIRPI VRYLDVKKTNKKE-SINEELHIRLMDHLKAGIEDVCGHWSHYQVRDKFKKPDHRYLRKILIRNDFKSSI VRYLDVFRTNKKE-SINEELHIRLMDHLKAGIEDVCGHWSHYQVRDKFKKFDHRYLRKILIRNQPKSSI VEFLDVFRSNKKQQAVSEEIYCRLFPHVMTGIEDVCGHWGHNFWRDKFKKFDDKYLRKILIRNQPKSSI VSLYKKLEMKQAIEMVETGILSSTAFSIHHDAORIQGIKRLSPEDVESIRDILISNMYQVRQRTLSYNKY VSLYKKLEMKQAIEMVETGILSSVASPTHYGSERIQGIKRLSPEDVESMRDILTRNMYQVRQRTLSYNKY VSLYKKLENKQAIEMAETGILSSVASPTHYGSERIQGIKRLSPEDVESMRDILTRNMYQVRQRTLSYNKY VSLYKKLEINHAIEMAETGILSSVASPTHYGSERIQGIKRUSPEDVESHRDILTRNMYQVRQRTLSYNKY NLKPOTSEKQAKEILIRRQNTLRESMRKGHSLPWGKPAGTKNIRYLSYFYGNPGSRG-FDTAAGFSBDD	474 482 543 552 613 613 622
ratNHE4 humanNHE2 TCH234 ratNHE4 humanNHE2 TCH234 ratNHE4 humanNHE2	FYVSNOFRTFPPSIKODILIFYSGVRGAGSFSLAFLLPHILFPRKKLFVTATLVVTYFTVEFDGITIGFI TOVINFRETIELTFKODILIANGEIRGAICEALVPLLHAAVFPRKKLEILAAIVVIFPTVFILGITIRPI VRYLDVKKTNKKE-SINEELHIRLMDHLKAGIEDVCGHWSHYQVRDKFKKFDHRYLRKILIFKNLPKSSI VRYLDVFRTNKKE-SINEELHIRLMDHLKAGIEDVCGHWSHYQVRDKFKKFDHRYLRKILIFKNQPKSSI VEFLDVFRSNKKQQAVSEEIYCRLFPHVWTGIEDVCGHWGHNFWRDKFKKFDHRYLRKILIFKNQPKSSI VSLYKKLEMKQAIEMVETGILSSTAFSIFHDAQRIQGIKRLSPEDVESIRDILISNMYQVRQRTLSYNKY VSLYKKLEMKQAIEMAETGILSSVASPTHYGSERIQGIKRLSPEDVESHRDILTRNMYQVRQRTLSYNKY VSLYKKLETHHAIEMAETGILSSVASPTHYGSERIQGIKRLSPEDVESHRDILTRNMYQVRQRTLSYNKY VSLYKKLETHHAIEMAETGILSSVASPTHYGSERIQGIKRVTSSETDEIRELLSRNILYGIRQRTLSYNRH NLKPQTSEKQAKEILIRRONTLRESPRKGHSLPWGKPAGTKNIRYLSYPYGNPGSRG-FDTRARGFSDDD NLKPQTSEKQAKEILIRRONTLRESPRKGHSLPWGKPAGTKNIRYLSFPYSNPQPAR-FGARAAES	474 482 543 552 613 613 622 682 678
ratNHE4 humanNHE2 TCH234 ratNHE4 humanNHE2 TCH234 ratNHE4 humanNHE2	FYVSNOFRTFPPSIKODILIFYSGVRGAGSFSLAFLLPHILFPRKKLFVTATLVVTYFTVEFDGITIGFI TOVINFRETIELTFKODILIANGEIRGAICEALVPLLHAAVFPRKKLEILAAIVVIFPTVFILGITIRPI VRYLDVKKTNKKE-SINEELHIRLMDHLKAGIEDVCGHWSHYQVRDKFKKFDHRYLRKILIFKNLPKSSI VRYLDVFRTNKKE-SINEELHIRLMDHLKAGIEDVCGHWSHYQVRDKFKKFDHRYLRKILIFKNQPKSSI VEFLDVFRSNKKQQAVSEEIYCRLFPHVWTGIEDVCGHWGHNFWRDKFKKFDHRYLRKILIFKNQPKSSI VSLYKKLEMKQAIEMVETGILSSTAFSIFHDAQRIQGIKRLSPEDVESIRDILISNMYQVRQRTLSYNKY VSLYKKLEMKQAIEMAETGILSSVASPTHYGSERIQGIKRLSPEDVESHRDILTRNMYQVRQRTLSYNKY VSLYKKLETHHAIEMAETGILSSVASPTHYGSERIQGIKRLSPEDVESHRDILTRNMYQVRQRTLSYNKY VSLYKKLETHHAIEMAETGILSSVASPTHYGSERIQGIKRVTSSETDEIRELLSRNILYGIRQRTLSYNRH NLKPQTSEKQAKEILIRRONTLRESPRKGHSLPWGKPAGTKNIRYLSYPYGNPGSRG-FDTRARGFSDDD NLKPQTSEKQAKEILIRRONTLRESPRKGHSLPWGKPAGTKNIRYLSFPYSNPQPAR-FGARAAES	474 482 543 552 613 613 622 682 678
ratNHE4 humanNHE2 TCH234 ratNHE4 humanNHE2 TCH234 ratNHE4 humanNHE2 TCH234 ratNHE4	FYUSNOFRTFPPSIKODILIFYSGURGAGSFSLAFLLPHILFPRKKLFVTATLUTTFTVEFDGITIGFI TOVINGERIFLITEKODILIANGELRGAICHALVPLLHAAVFPRKKLEILAAIVVIFPTVFILGITIRPI VRYLDVKKTNKKE-SINEELHIRLMDHLKAGIEDVCGHWSHYQVRDKFKKFDHRYLRKILIERNLPKSSI VRYLDVGRTNKKE-SINEELHIRLMDHLKAGIEDVCGHWSHYQVRDKFKKFDHRYLRKILIERNQPKSSI VEFLDVGRSNKHQQAVSEEIVCRLFPHVMTGIEDVCGHWSHNFWRDKFKKFDDRYLRKILIERNQPKSSI VSLYKKLEMKQAIEMVETGILSSTAFSIFHDAQRIQGIKRLSPEDVESIRDILISNMYQVRQRTLSYNKY VSLYKKLEMKQAIEMAETGILSSVASPTHYGSERIQGIKRLSPEDVESHRDILTRNMYQVRQRTLSYNKY VSLYKKLEIMHAIEMAETGILSSVASPTHYGSERIQGIKRLSPEDVESHRDILTRNMYQVRQRTLSYNKY VSLYKKLEIMHAIEMAETGILSSVASPTHYGSERIQGIKRVTSSETDEIMELLSRNILYGIRQRTLSYNKH NLKPQTSEKQAKEILIRRONTLRESMRKGHSLFWGKPAGTKNIRYLSYPYGNPQSAG-GDTRARGFSDDD NLKPQTSEKQAKEILIRRONTLRESMRKGHSLFWGKPAGTKNIRYLSFPYSNPQPAR-GGARAAES STADTSEROAKEILIRRONTLRESLRKGOSLFWVKPAGTKNFRYLSFFYSNPQPAR-GGARAAES	474 482 543 552 613 613 622 682 678
ratNHE4 humanNHE2 TCH234 ratNHE4 humanNHE2 TCH234 ratNHE4 humanNHE2 TCH234 ratNHE4	FYUSNOFRTFPPSIKODILIFYSGURGAGSFSLAFLLPHILFPRKKLFVTATLUTTFTVEFDGITIGFI TOVINGERIFLITEKODILIANGELRGAICHALVPLLHAAVFPRKKLEILAAIVVIFPTVFILGITIRPI VRYLDVKKTNKKE-SINEELHIRLMDHLKAGIEDVCGHWSHYQVRDKFKKFDHRYLRKILIERNLPKSSI VRYLDVGRTNKKE-SINEELHIRLMDHLKAGIEDVCGHWSHYQVRDKFKKFDHRYLRKILIERNQPKSSI VEFLDVGRSNKHQQAVSEEIVCRLFPHVMTGIEDVCGHWSHNFWRDKFKKFDDRYLRKILIERNQPKSSI VSLYKKLEMKQAIEMVETGILSSTAFSIFHDAQRIQGIKRLSPEDVESIRDILISNMYQVRQRTLSYNKY VSLYKKLEMKQAIEMAETGILSSVASPTHYGSERIQGIKRLSPEDVESHRDILTRNMYQVRQRTLSYNKY VSLYKKLEIMHAIEMAETGILSSVASPTHYGSERIQGIKRLSPEDVESHRDILTRNMYQVRQRTLSYNKY VSLYKKLEIMHAIEMAETGILSSVASPTHYGSERIQGIKRVTSSETDEIMELLSRNILYGIRQRTLSYNKH NLKPQTSEKQAKEILIRRONTLRESMRKGHSLFWGKPAGTKNIRYLSYPYGNPQSAG-GDTRARGFSDDD NLKPQTSEKQAKEILIRRONTLRESMRKGHSLFWGKPAGTKNIRYLSFPYSNPQPAR-GGARAAES STADTSEROAKEILIRRONTLRESLRKGOSLFWVKPAGTKNFRYLSFFYSNPQPAR-GGARAAES	474 482 543 552 613 613 622 682 678
ratNHE4 humanNHE2 TCH234 ratNHE4 humanNHE2 TCH234 ratNHE4 humanNHE2 TCH234 ratNHE4 humanNHE2	FYSNOFRTFPPSIKODILIFYSGVRGAGSFSLAFLLPHILFPRKKLFVTATLVUTFFTVEFDGITIGFI TOVINFRETIELTFKDDFLIANGGLRGAICEALVFLLHAAVFPRKKLEITAALVVIFFTVFILGITIRFI VRYLDVKKTNKKE-SINEELHIRLMDHLKAGIEDVCGHWSHYQVRDKFKKFDHRYLRKILIRKNLFKSSI VRYLDVFRTNKKE-SINEELHIRLMDHLKAGIEDVCGGWSHYQVRDKFKKFDHRYLRKILIRKNQPKSSI VEFLDVFRSNKKQQAVSEEIYCRLFPHVMTGIEDVCGHWGHNFWRDKFKKFDHRYLRKILIRKNQPKSSI VSLYKKLEMKQAIEMVETGILSSTAFSIHHDAQRIQGIKRLSPEDVESIRDILISNMYQVRQRTLSYNKY VSLYKKLEMKQAIEMVETGILSSVASPTHYGSERIQGIKRLSPEDVESMRDILTRNMYQVRQRTLSYNKY VSLYKKLETHHAIEMAETGHISTVFTFASLNDCHEEKHRKVTSSETDEINELLSRNLYGIRQRTLSYNRH NLKPQTSEKQAKEILIRRQNTLRESMRKGHSLFWGKPAGTKNIRYLSFFYSNPQPAR-GGARAES STADTSEROAKEILIRRQNTLRESLRKGQSLFWVKPAGTKNFRYLSFFYSNPQPAR-GGARAES STADTSEROAKEILIRRRHSLRESIRKDSSINREHRRSMSTSRYLSLEKNTKLEKLQKRRTISIADGN SSDEGSPSIDFSAGSRIGSLGKQERQEIIHMKSLERGRKAFSFGYQRNTSQEEYFG	474 482 543 552 613 613 622 682 678 692
ratNHE4 humanNHE2 TCH234 ratNHE4 humanNHE2 TCH234 ratNHE4 humanNHE2 TCH234 ratNHE4 humanNHE2	FYSNOFRTFPPSIKODILIFYSGVRGAGSFSLAFLLPHILFPRKKLFVTATLVUTFFTVEFDGITIGFI TOVINFRETIELTFKDDFLIANGGLRGAICEALVFLLHAAVFPRKKLEITAALVVIFFTVFILGITIRFI VRYLDVKKTNKKE-SINEELHIRLMDHLKAGIEDVCGHWSHYQVRDKFKKFDHRYLRKILIRKNLFKSSI VRYLDVFRTNKKE-SINEELHIRLMDHLKAGIEDVCGGWSHYQVRDKFKKFDHRYLRKILIRKNQPKSSI VEFLDVFRSNKKQQAVSEEIYCRLFPHVMTGIEDVCGHWGHNFWRDKFKKFDHRYLRKILIRKNQPKSSI VSLYKKLEMKQAIEMVETGILSSTAFSIHHDAQRIQGIKRLSPEDVESIRDILISNMYQVRQRTLSYNKY VSLYKKLEMKQAIEMVETGILSSVASPTHYGSERIQGIKRLSPEDVESMRDILTRNMYQVRQRTLSYNKY VSLYKKLETHHAIEMAETGHISTVFTFASLNDCHEEKHRKVTSSETDEINELLSRNLYGIRQRTLSYNRH NLKPQTSEKQAKEILIRRQNTLRESMRKGHSLFWGKPAGTKNIRYLSFFYSNPQPAR-GGARAES STADTSEROAKEILIRRQNTLRESLRKGQSLFWVKPAGTKNFRYLSFFYSNPQPAR-GGARAES STADTSEROAKEILIRRRHSLRESIRKDSSINREHRRSMSTSRYLSLEKNTKLEKLQKRRTISIADGN SSDEGSPSIDFSAGSRIGSLGKQERQEIIHMKSLERGRKAFSFGYQRNTSQEEYFG	474 482 543 552 613 613 622 682 678 692
ratNHE4 humanNHE2 TCH234 ratNHE4 humanNHE2 TCH234 ratNHE4 humanNHE2 TCH234 ratNHE4 humanNHE2	FYUSNOFRIFPSIRDDILIFYSGURGAGSFSLAFLLPHITFPRKKLFVTATLUTTFTVEFDGITIGFI TOWNFRENDELLTFKDOPLIANGGLRGAICEARVFLLHAAVFPRKKLEITAAIVVIFFTVFILGITIRPI VRYLDVKKTNKKE-SINEELHIRLMDHLKAGIEDVCGHWSHYQVRDKFKKFDHRYLRKILIEKNLPKSSI VRYLDVFRTNKKE-SINEELHIRLMDHLKAGIEDVCGHWGHNFWRDKFKKFDHRYLRKILIEKNQPKSSI VEFLDVFRSNKKQQAVSEEIYCRLFPHVWTGIEDVCGHWGHNFWRDKFKKFDDKYLRKLLIEENQPKSSI VSLYKKLEMKQAIEMVETGIESTAFSIEHDAQRIQGIKRLSPEDVESIRDILISNMYQVRQRTLSYNKY VSLYKKLEMKQAIEMVETGIESSVASPTEYGSERIQGIKRLSPEDVESMRDILTRNMYQVRQRTLSYNKY VSLYKKLEMKQAIEMAETGILSSVASPTEYGSERIQGIKRLSPEDVESMRDILTRNMYQVRQRTLSYNKY VSLYKKLEINHAIEMAETGILSSVASPTEYGSERIQGIKRVTSSETDEIMELHSRNLYGIRQRTLSYNRH NLKPQTSEKQAKEILIRRQNTLRESMRKGHSLPWGKPAGTKNIRYLSYPYGNPQSAG-RDTRAAGFSDDD NLKPQTSEKQAKEILIRRQNTLRESMRKGHSLPWGKPAGTKNIRYLSYPYGNPQSAG-RDTRAAGFSDDD NLKPQTSEKQAKEILIRRQNTLRESMRKGHSLPWGKPAGTKNIRYLSYPYGNPQSAG-RDTRAAGFSDDD NLKPQTSEKQAKEILIRRQNTLRESLRKGOSLPWVKPAGTKNFRYLSFFYSNPQPAR-HGARAAES SCTADTSEROAKEILIRRRHSLRESIRKDSSUNREHRASMSTSRYLSLEKNTKLHEKLOKRETISIADGN SSDEGSPSIDFSAGSRIGSLOKQERQEIIHMKSLERGRKAFSFGYQRNTSQEEYDG	474 482 543 552 613 613 622 682 678 692 739 690
ratNHE4 humanNHE2 TCH234 ratNHE4 humanNHE2 TCH234 ratNHE4 humanNHE2 TCH234 ratNHE4 humanNHE2 TCH234 ratNHE4 humanNHE2	FYUSNOFRIFPSIRDDILIFYSGURGAGSFSLAFLLPHITFPRKKLFVTATLUTTFTVEFDGITIGFI TOWNFRENDELLTEKOOPLIANGGLEGATCEALVPLLHAAVFPRKKLEITAALVVIFFTVFILGITIRFI VRYLDVKKTNKKE-SINEELHIRLMDHLKAGIEDVCGHWSHYQVRDKFKKFDHRYLRKILIEKNLPKSSI VRYLDVRKTNKKE-SINEELHIRLMDHLKAGIEDVCGHWGHNFWRDKFKKFDHRYLRKILIEKNQPKSSI VEFLDVRRSNKKQQAVSEEIYCRLFDHVWTGIEDVCGHWGHNFWRDKFKKFIDKYLRKILIEKNQPKSSI VSLYKKLEMKQAIEMVETGIESSTAFSIEHDAORIOGIKRLSPEDVESIRDILTSNMYQVRQRTLSYNKY VSLYKKLEMKQAIEMVETGIESSTAFSIEHDAORIOGIKRLSPEDVESIRDILTSNMYQVRQRTLSYNKY VSLYKKLEMKQAIEMAETGILSSVASPTHYGSERIQGIKRLSPEDVESIRDILTRNMYQVRQRTLSYNKY VSLYKKLEMKQAIEMAETGILSTVPTFASLNDCKEEKHRKVTSSETDELKELLSRNLYGIRQRTLSYNKH NLKPQTSEKQAKEILIRRQNTLRESMRKGHSLPWGKPAGTKNIRYLSYPYGNPQSAG-RDTRAAGFSEDD NLKPQTSEKQAKEILIRRQNTLRESMRKGHSLPWGKPAGTKNIRYLSYPYGNPQSAG-RDTRAAGFSEDD NLKPQTSEKQAKEILIRRQNTLRESLRKGOSLPWVKPAGTKNFRYLSFPYSNPQPAR-GGARAAES SCHADTSERQAKEILIRRRHSLRESIRMDSSINREHRWSHSTSRYLSLEKNTKLEEKLQKRRTISIAGGN SSDEGSPSIGFSAGSRIGSLGKQERQEIIBMKSLERGRKAFSFGYQRNTSQEEYEG	474 482 543 552 613 613 622 682 678 692 739 690
ratNHE4 humanNHE2 TCH234 ratNHE4 humanNHE2 TCH234 ratNHE4 humanNHE2 TCH234 ratNHE4 humanNHE2 TCH234 ratNHE4 humanNHE2	FYSNOFRIFPSIRODILIFYSGVRGAGSFSLAFLLPHTFPRKKLFVTATLVTTFTVEFDGITIGFI TOWNFFRTIELTFKOOPLIANGGLRGAICFALVFLLHAAVFPRKKLEITAAIVVIFFTVFILGITIRPI VRYLDVKKTNKKE-SINEELHIRLMDHLKAGIEDVCGHWSHYQVRDKFKKFDHRYLRKILIEKNLPKSSI VRYLDVFRTNKKE-SINEELHIRLMDHLKAGIEDVCGHWSHYQVRDKFKKFDHRYLRKILIEKNQPKSSI VEFLDVFRSNKKQQAVSEEIYCRLFPHVWTGIEDVCGHWGHNFWRDKFKKFDRYLRKLLIEKNQPKSSI VSLYKKLEMKQAIEMVETGILSSTAFSIHHAQRIQGIKRLSPEDVESIRDILISNMYQVRQRTLSYNKY VSLYKKLEMKQAIEMVETGILSSVASPTEYGSERIQGIKRLSPEDVESMRDILTRNMYQVRQRTLSYNKY VSLYKKLEIKHAIEMAETGHIGTVPTFASLNDCHEEKHRKVTSSETDEITGLISRNLKGIRQRTLSYNKY NSLYKKLEIKHAIEMAETGHIGTVPTFASLNDCHEEKHRKVTSSETDEITGLISRNLKGIRQRTLSYNKH NLKPQTSEKQAKEILIRRQNTLRESMRKGHSLPWGKPAGTKNIRYLSYPYGNPQSAG-RDTRAAGFSDDD NLKPQTSEKQAKEILIRRQNTLRESMRKGHSLPWGKPAGTKNIRYLSYPYSNPQPAR-HGARAAES SCTADTSEROAKEILIRRQNTLRESLRKGOSLPWVKPAGTKNFRYLSFPYSNPQPAR-HGARAAES SCTADTSEROAKEILIRRRHSLRESIRKDSSUNREHRRSHSTSRYLSLEKNTKLHEKLOKRETISIADGN SSDEGSPSIDFSAGSRIGSLGKQERQEIIEMKSLERGRKAFSFGYQRNTSQEEYDG	474 482 543 552 613 613 622 682 678 692 739 690 756
ratNHE4 humanNHE2 TCH234 ratNHE4 humanNHE2 TCH234 ratNHE4 humanNHE2 TCH234 ratNHE4 humanNHE2 TCH234 ratNHE4 humanNHE2	FYUSNOFRIFPSIRDDILIFYSGURGAGSFSLAFLLPHITFPRKKLFVTATLUTTFTVEFDGITIGFI TOWNFRENDELLTEKOOPLIANGGLEGATCEALVPLLHAAVFPRKKLEITAALVVIFFTVFILGITIRFI VRYLDVKKTNKKE-SINEELHIRLMDHLKAGIEDVCGHWSHYQVRDKFKKFDHRYLRKILIEKNLPKSSI VRYLDVRKTNKKE-SINEELHIRLMDHLKAGIEDVCGHWGHNFWRDKFKKFDHRYLRKILIEKNQPKSSI VEFLDVRRSNKKQQAVSEEIYCRLFDHVWTGIEDVCGHWGHNFWRDKFKKFIDKYLRKILIEKNQPKSSI VSLYKKLEMKQAIEMVETGIESSTAFSIEHDAORIOGIKRLSPEDVESIRDILTSNMYQVRQRTLSYNKY VSLYKKLEMKQAIEMVETGIESSTAFSIEHDAORIOGIKRLSPEDVESIRDILTSNMYQVRQRTLSYNKY VSLYKKLEMKQAIEMAETGILSSVASPTHYGSERIQGIKRLSPEDVESIRDILTRNMYQVRQRTLSYNKY VSLYKKLEMKQAIEMAETGILSTVPTFASLNDCKEEKHRKVTSSETDELKELLSRNLYGIRQRTLSYNKH NLKPQTSEKQAKEILIRRQNTLRESMRKGHSLPWGKPAGTKNIRYLSYPYGNPQSAG-RDTRAAGFSEDD NLKPQTSEKQAKEILIRRQNTLRESMRKGHSLPWGKPAGTKNIRYLSYPYGNPQSAG-RDTRAAGFSEDD NLKPQTSEKQAKEILIRRQNTLRESLRKGOSLPWVKPAGTKNFRYLSFPYSNPQPAR-GGARAAES SCHADTSERQAKEILIRRRHSLRESIRMDSSINREHRWSHSTSRYLSLEKNTKLEEKLQKRRTISIAGGN SSDEGSPSIGFSAGSRIGSLGKQERQEIIBMKSLERGRKAFSFGYQRNTSQEEYEG	474 482 .543 552 613 613 622 682 678 692 739 690 756

FIG. 7

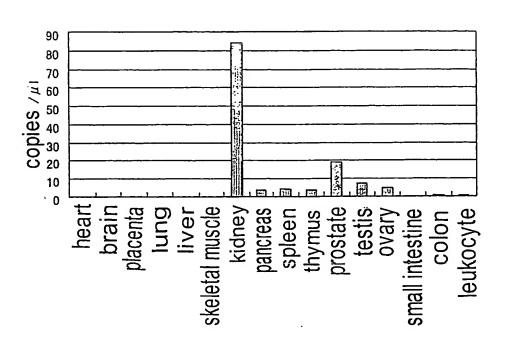


FIG. 8

matpba2 atpba1 TCH212	matpba2 atpba1 tch212	matpbaz Atpbal TCH212	MATPBA2 ATPBA1 TCH212	matpba2 Atpba1 TCH212	matpbaz Atpbal TCH212	matpba2 atpba1 tch212
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FIG. 9

00 FKKCSIAGVTYGHFPELAREQSSDDF-CRMTSCTNDSCDFNDPRLHKNIEDQHPTA MATPBA2 21 FKKCTIAGVAYGHVPEPEDYGCSPDEWQNSQFGDEKTFSDSSLLENLQNNHPTA ATPBA1 00 FKKCSIAGVTYGHFPELAREPSSDDF-CRMPPPCSDSCDFDDPRLHKNIEDRHPTA TCH212	55 PCIQEFLTLLAVCHTVVPEKDGDEIIYQASSPDEAALVKGAKKLGFVFTGRTPYSVIIEA MATPBA2 75 PIICEFLTHMAVCHTAVPEREGDKIIYQAASPDEGALVRAAKQLNFVFTGRTPDSVIIDS ATPBA1 55 PCIQEFLTLLAVCHTVVPEKDGDNIIYQASSPDEAALVKGAKKLGFVFTARTPFSVIIEA TCH212	15 MGOEOTFGILNVLEFSSDRKRMSVIVRLPSGQLRLYCKGADNVIFERUSKDSKYMEETLC MATPBA2 35 LGOEERYELLNVLEFTSARKRMSVIVRTPSGKLRLYCKGADTVIYDRLAETSKYKEITLK ATPBA1 15 MGOEOTFGILNVLEFSSDRKRMSVIVRTPSGRLRLYCKGADNVIFERLSKDSKYMEETLC TCH212	75 HLBYFATEGLRTLOVAYADLSENEYEEWLKVYOBASIILKDRAQRLEECYEIIEKNLLLL MATP8A2 95 HLEOFATEGLRTLOFAVAEISESDFOEWRAVYORASTSVONRLLKLEESXELIEKNLOLL ATP8A1 75 HLEYFATEGLRTLOVAYADLSENEYEEWLKVYOBASTILKDRAORLEECXEIIEKNLLL TCH212	35 GATAIEDRLOAGVPETIATLLKABIKIW VLTGDKQETAINIGYSCRLVSQNMALILLKED MATPBA2 55 GATAIEDRLODQVPETIETLMKADIKIW ILTGDKQETAINIGHSCKLLKKNMGMIVINEG ATPBA1 35 GATAIEDRLOAGVPETIATLKAEIKIWVLTGDKQETAINIG YSCRLVSQNMALILLKED TCH212	95 SLDATRAAITQHCTDLGNLLGKENDVALIIDGHTLKYALSFEVRRSFLDLALSCKAVICC MATPBA2 15 SLDGTRETLSRHCTTLGDALRKENDFALIIDGKTLKYALTFGVRQYFLDLALSCKAVICC ATPBA1 95 SLDATRAAITQHCTDLGNLLGKENDVALIIDGHTLKYALSFEVRRSFLDLALSCKAVICC TCH212	55 RVSPLQKSEIVDVVKKRVKAITLAIGDGANDVGMIQTAHVGVGISGNEGMQATNNSDYAI MATPBA2 75 RVSPLQKSEVVEMVKKQVKVTLAIGDGANDVSMIQTAHVGVGISGNEGLQAANSSDYSI ATPBA1 55 RVSPLQKSEIVDVVKKRVKAITLAIGDGANDVGMIQTAHVGVGISGNEGMQATNNSDYAI TCH212
400 421 400	455 475 455	515	595	635	69! 71! 69!	75 77 75

FIG. 10

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	mATP8A2	ATPBAI	TCH212		mATP8A2	ATPBA1	TCH212	mATP8A2	ATPBAL	TCH212	MATPBAZ		TCH212	mATP8A2	ATPBA1	TCH212	mATPRA2	ATPBAL	TCH212
THS	NRVIKCILYCFYKNVVLYIIELWFAFVNGFSGQILFERMCI	NRVSKCILYCFYKN IVLYIIDI WFAFVNGFSGOILFERWC	NRVTKCIL	TM7	RSCIQESMURFPQLYRITQNAEGFNTKVFWGHCINALV	RSCRKENMLKYPELYKTSQNALDFNTKVFWVHCLNGLFHSVI	RSCTQESMLRFPQLYKITQNGEGFNTKVFWGHCTNALVKSLI	HATIDY LIFVIGNIVY TIYVYIVIVY CLKAGLETITAIN TKIFSHLIAVINGS	KISDYLLLGNFVYT	HATDYLFVGNIVYTYVVVTVCLKAGLETTAMTKFSHLAVMGS	PITAPDMKIGOTATMVLISSAYIFWLIGLIFLVIPTAICLLIBIDVAWRAAKH	PMAPDMSGEAAMLFSSGVFWMGLLFIPVASLLLDVVXKVIK	PIAPDMRGONTMVLESAHFWLG	V MGKAMLRDS NGKRMNERD RILIKRLS KKTPPTLIFRT GISTQC	DPGAVVL GKSLT	ı vılgın avlılın sıngının en parlılıkını griyte etil fing sisi ilog g		EVIRAYDTTKORPDE	EVIRAYDTTK
	FSYLEKLLLVHGAWSY	FKYLKNLLMIHGAWNY	AQFSYLEKLLLVHGAWSY	THE	LYNVIFTALPPFTLGIFE	NVMFTAMPPLTLGIFE	LYNVIFTALPPFTLGIFE	VPNKALEHUTPVTSG	LFWFPLKALQYGTAFGNG	LFWFPMKALEHDTVLTSG	MITERIALIN	O15 I A L W V V F F G I Y S S L W P A I	LVFFGIXSTIWPTI	ELETKSR	TAFKTLVDEVQELEAKSQ	VQELETKSR		LHGXAFSODENGHVSOS	VPHGYAFSQEEHGAVSQE

FIG. 11

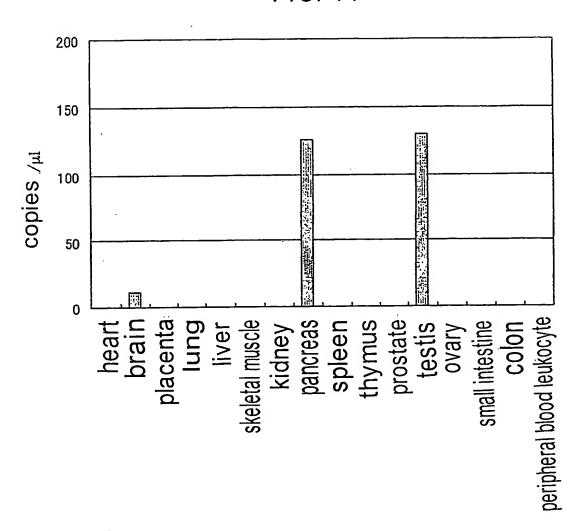
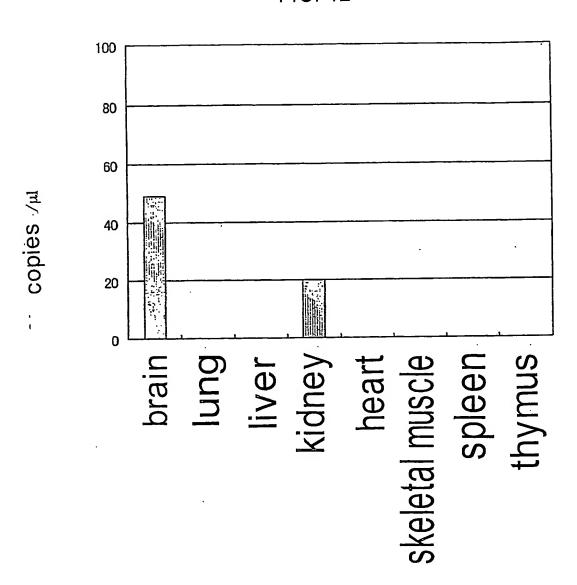
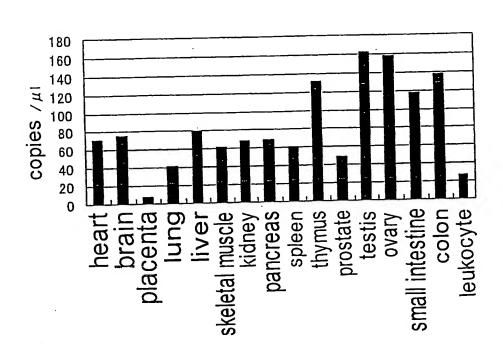


FIG. 12



1 MKKWSSTDLGAAADPLQKDTCPDPLDGDPNSRPPPAKPQLST 1 MKAHPKENVPLNGKRVAAPSGNPAVLPEKRPAEITF	PAKSRTR hVR1 PTKKSAH TCH200
49 LFGKGDSEEAFPVDCPHEEGELDSCPTITVSPVI 43 FFLEIEGFEPNPTVAKTSPPVFSKPMDSNIROCISGNCDDMI	TTIQRPG hVR1 SPQSPQ TCH200
89 DGPTGARLLSQDSVAASTEKTLRLYDRR SIFEAVAQNNC 91 DDVTETPSNPNSPSAQLAKEEQRRKKRRLKKRIFAAVSEGCV	Q D L E S L hVR1 V E E L V E L TCH200
134 LLFLOKSKKHLTDNEFKDPETGKTCLKAMLNL1 139 LVELOELCRRHDEDVPDFLMHKLTASDTGKTCLMKALLNII	HDGQNTT hVR1. NPNTKEI TCH200
174 I P L L L E I A R Q T D S L K E L V N A S Y T D S Y Y K G Q T A L H I A I E R R N I 187 V R I L L A F A E E N D I L G R F I N A E Y T E E A Y E G Q T A L N I A I E R R Q Q	32 1 K K = = 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1
222 VENGADVQAAAHGDFFKKTKGRPGFYFGELPLSLAACTNQLC 235 IAAGADVNAHAKGAFPNPKYQHEGFYFGETPLALAACTNQP	GIVKFIL bVR1 EIVQLLM TCH200
270 QNSWQTADISARDSVGNTVLHALVEVADNTADNTKFVTSMY 283 EHEQTDITSRDSRGNNILHALVTVAEDFKTQNDFVKRMY	NEILILG AVRI
318 AKLHPTLKLEELTNKKGMMPLALAAGTGKIGVLAYILQREI 329 GNWELETTRNNDGLTPLQLAAKMGKAEILKYILSREI	QEPECRH bvrl
366 L S R K F T E W A Y G P V H S S L Y D L S C I D T C E K N S V L E V I A Y S S S E 373 L S R K F T D W A Y G P V S S S L Y D L T N V D T T T D N S V L E I T V Y N T N I THI	T PNRHDM hVR1 D-NRHEM TCH200
414 LL VEPLNRLLQDKWDRFVKRIFYPRFLVYCLYMIIFTMAAY 420 LTLEPLHTLLHMKWKKFAKHMFFLSFCFYFFYNITLTL TM2	Y R P V D G L hVR1
462 PPFKMEKTGDYFRVTGEI - LSVLGGVYFFFRG 467EAIPHPLALTHKMGWLQLLGRMFVLIWAMCISVKEG	IQYFLQR hVR1
500 RPSMKTLFVDSYSEMLFFLQSLFMLATVVLYFSHLKEYVAS 510 PSDLOSILSDAWFHFVFFIQAVLVILSVFLYLFAYKEYLAC	MVF S LA L bVR1
548 G WINMLYYTR G F Q Q M G I Y A V M I E K M I L R D L C R F M F V Y I V F L 558 G W A N M L Y Y T R G F Q S M G M Y S V M I Q K V I L H D V L K F L F V Y I V F L	FGFSTAV hVR1
596 V TLIED G K ND S L P S E S T S H R W R G P A C R P P D S S Y N S L Y S T C L 606 A S L I E K C P K D N K D C - TH6 - S S Y G S P S D A V L	ELFKFTI hVR1
644 G MG D L E P T E N Y D F K A V F I I L L A Y V I L T Y I L L N M L I A L M G 638 G L G D L N I Q Q N S K Y P I L F L P L L I T Y V I L T F V L L L N M L I A L M G	ETVNKIA hVR1
692 QESKNIWKLQRAITILD TEKSFLKCMRKAFRSGKLLQVGYT 686 KESERIWRLQRARTILE FEKMLPEWLRS RFRMGELCKVA	PDGKDDY hVR1
740 RWCFRVDEVNWTTWNTNVGIINEDPGNCEGVKRTLSFSLRS 729 RLCLRINEVKWTEWKTHVSFLNEDPGPVRRTADFN	
788 W K N F A L V P L L R E A S A R D R Q S A Q P E E V Y L R Q F S G S L K P E D A E 764 E E V E	
836 S G E K 789 T S V .	hVR1 TCH200

FIG. 14



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MRANCSSSSACPANSSEEELPVGLEVHGNLELVFTVVSTV hTCH230
  MSTDCAGNSTCPVNSTEEDPPVGMEGHANLKLLFTVLSAV mTCH230
  MMGLLMFSLGCSVEIRKLWSHIRRPWGIAVGLLCQFGLMP hTCH230
  MVGLVMFSFGCSVESQKLWLHLRRPWGIAVGLLSQFGLMP mTCH230
81 FTAYLLAISFSLKPVQAIAVLIMGCCPGGTISNIFTFWVD hTCH230
81 LTAYLLAIGEGLKPFQAIAVLMMGSCPGGTISNVLTFWVD mTCH230
121 G D M D L S I S M T T C S T V A A L G M M P L C I Y L Y T W S W S L Q Q N L T I hTCH230
121 G D M D L S I S M T T C S T V A A L G M M P L C L Y I Y T R S W T L T Q N L V I mTCH230
161 PYQNIGITLVCLTIPVAFGVYVNYRWPKOSKILLKIGAVV hTCH230
161 PYQSIGITLVSLVVPVASGVYVNYRWPKQATVILKVGAIL mTCH230
201 G G V L L V V A V A G V V L A K G S W N S D I T L L T I S F I F P L I G H V T hTCH230
201 G G M L L L V V A V T G M V L A K G - W N T D V T L L V I S C I F P L V G H V T mTCH230
241 GFLLALFTHQSWQRCRTISLETGAQNIQMCITMLQLSFTA hTCH230
240 GFLLAFLTHQSWQRCRTISIETGAQNIQLCIAMLQLSFSA mTCH230.
281 EHLVOMLSFPLAYGLFOLIDGFLIVAAYOTYKRRLKNKHG hTCH230
280 EYLVOLLNFALAYGLFQVLHGLLIVAAYQAYKRRQKSKCR mTCH230
321 KKNSGCTEVCHTRKSTSSRETNAFLEVNEEGAITPGPPGP hTCH230
320 RQHPDCPDVCYEKQP---RETSAFLDKGDEAAVTLGPVQP mTCH230
                                                        hTCH230
361 M D CHRALEP V GHITS CE
                                                        mTCH230
357 EQHHRAAELTSHIPSCE
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FIG. 16

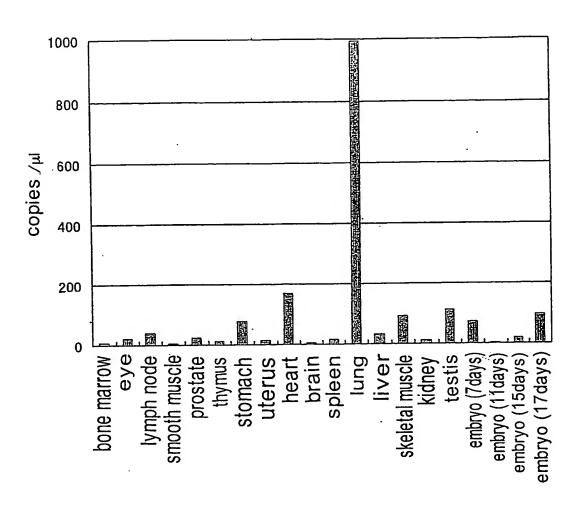


FIG. 17

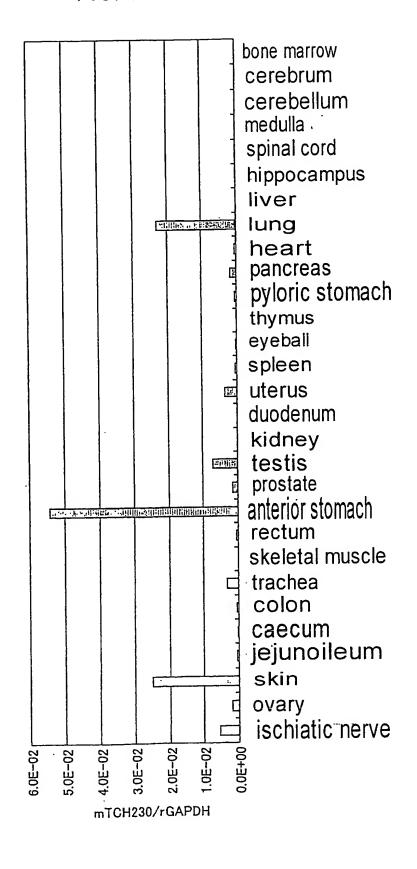


FIG. 18

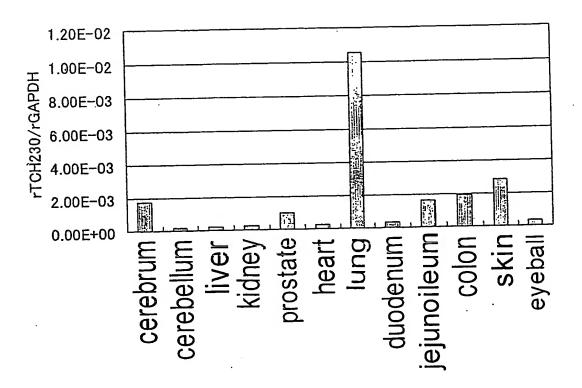


FIG. 19

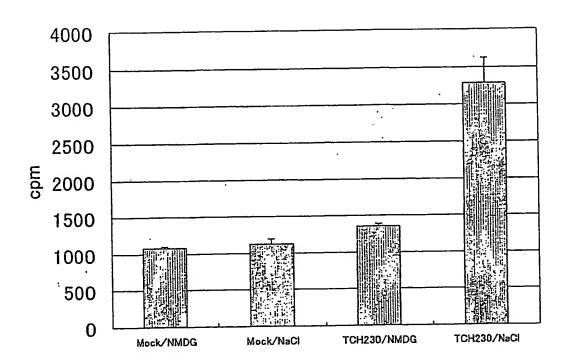


FIG. 20

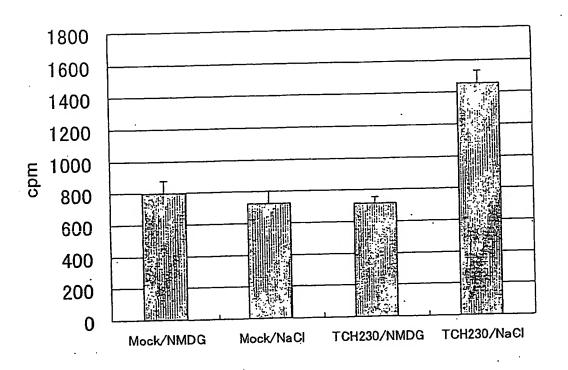


FIG. 21

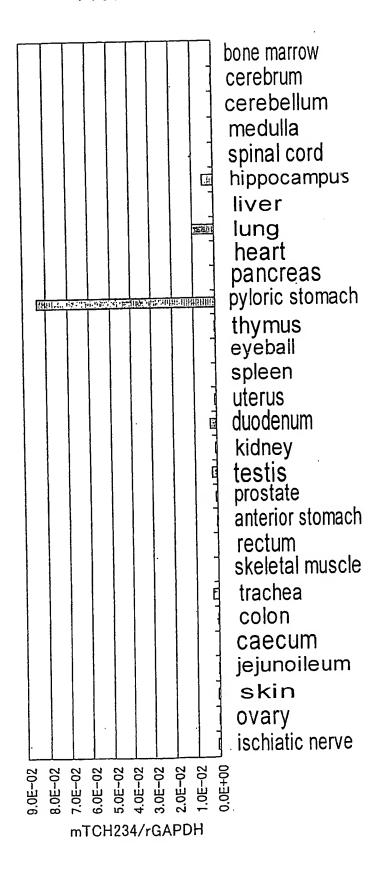


FIG. 22

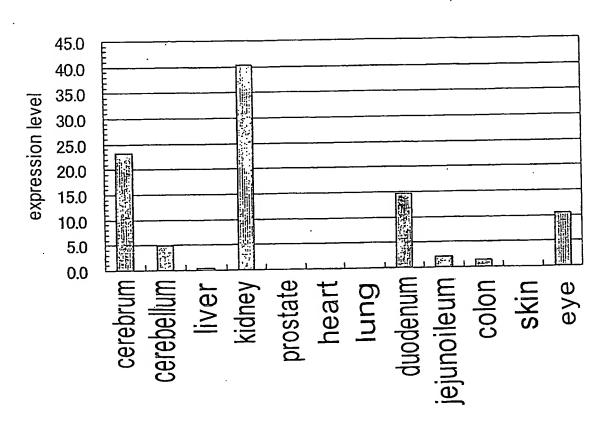


FIG. 23

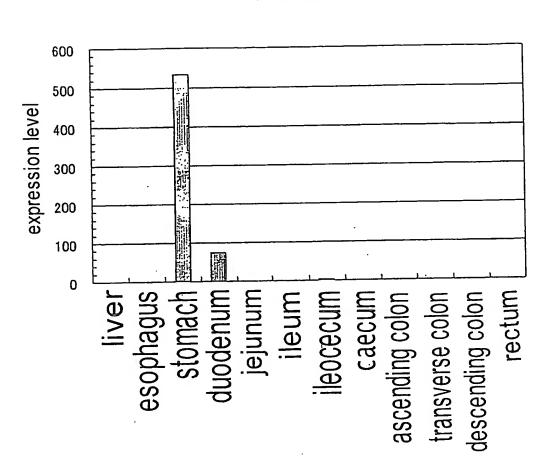


FIG. 24

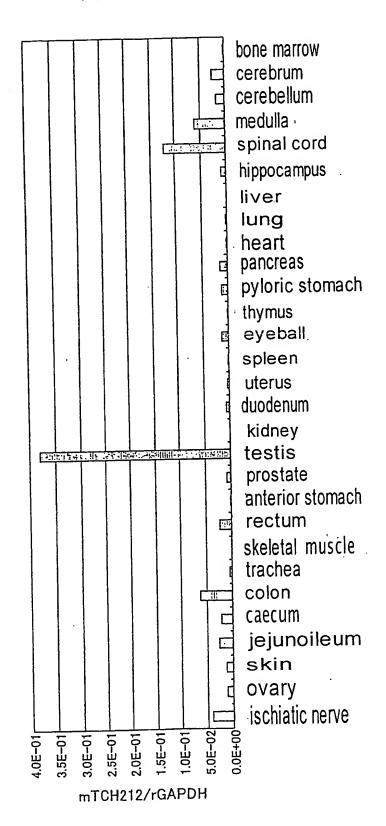


FIG. 25

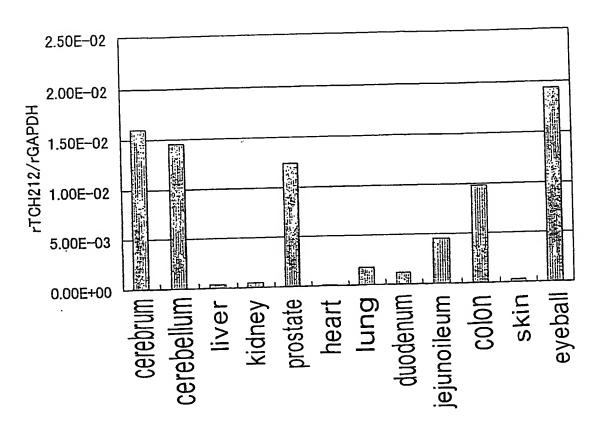


FIG. 26

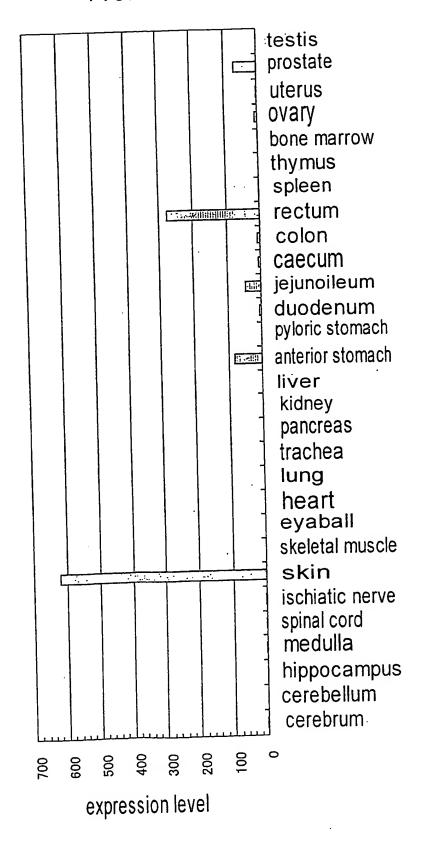


FIG. 27

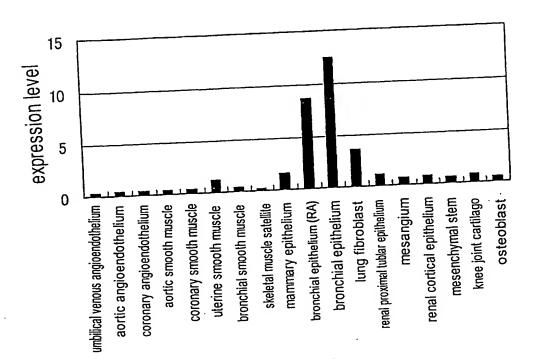


FIG. 28

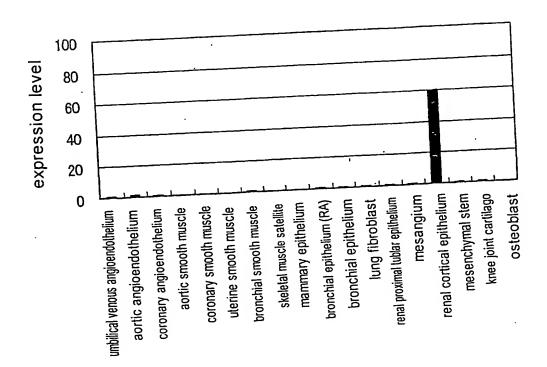


FIG. 29

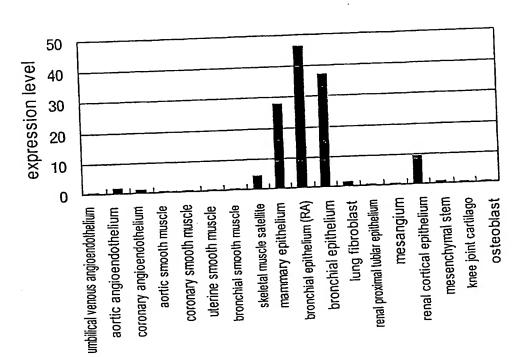


FIG. 30

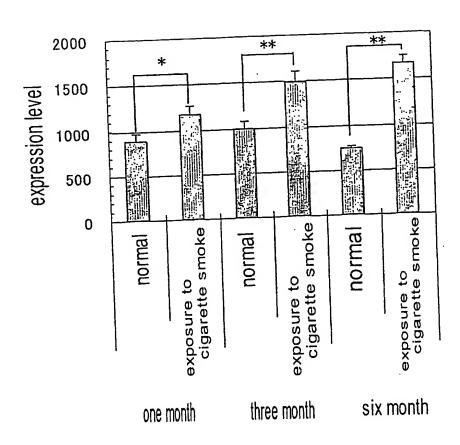


FIG. 31

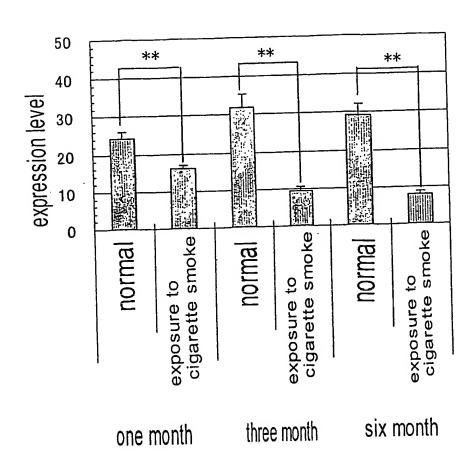


FIG. 32

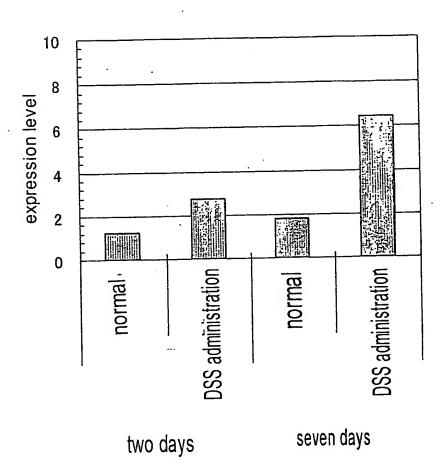


FIG. 33

